

PROJECT NUMBER: 1740
PROJECT TITLE: Flavor Components of Tobacco and Filler
PROJECT LEADER: C. S. Kroustalis
PERIOD COVERED: November, 1985

I. FLAVORS

A. Two essential oils and two proposed synthetic substitutes were profiled for Operations Services. The substitutes contained trace levels of undesirable components.

B. A Guatemalan flavor (85-012-GUA) contained 1.4% CF.

C. Three Players Lights menthol flavor concentrates were profiled. Only one showed mostly quantitative differences which were attributed to starting ingredients batch differences by Flavor Center personnel.

D. Two proposed substitute flavors showed minor quantitative differences. The supplier will prepare new batches of these flavors using ingredients from the same batch.

E. Brazilian and Chinese mint oils and menthols derived from these oils by both the Brazilian and Chinese processes were profiled to determine whether differences could be detected. The differences were noticeable and one could determine the source of menthol. Steam distillates from the filters of Salem, Newport, Kool and B&H cigarettes were compared. The minor menthol isomers were identified by GC/MS (D. Magin) and were quantitated by T. Crews.

II. OTHERS

A. Samples of autoclaved RL which was inoculated with bacteria isolated from SEL by D. Chaddick and stored at 80% R.H. and 37 degrees C for a week were analyzed daily. Results showed that bacterial fermentation was taking place. The results indicate that sugars were converted to 2,3- and 1,3-butanediols in addition to increases of acetic and propanoic acids. Another indication of fermentation was the conversion of 2,3-butanediol to acetoin near the end of the cycle. Further work will be necessary to determine whether the subjective off-taste of spoiled RL is related to bacterial biomass increase.

B. Warehouse RL and replacement humectant study samples were screened for volatile fatty acids. Approximately 500 samples were analyzed during this reporting period.

C. Players Lights menthol filler and cigarettes were analyzed for residual ethanol. Ethanol concentrations were higher than nonmenthol fillers and cigarettes.

D. Players Lights menthol, Merit 100's and B&H 100's with fruity pack aromas contained higher than usual levels of printing ink solvents (propyl and isopropyl

2000829676

acetates, toluene and mesityl oxide). Also present were 2,4-dimethyl-1,3-dioxolane-2-methanol, 2,2-dimethyl-1,3-dioxolane-4-methanolacetate, acetonyl alcohol and acetoin. The dioxolanes derive from glycols and aldehydes or ketones while acetoin and acetonyl alcohol are the respective bacterial fermentation products of 2,3-butanediol and PG according to the Merck Index.

E. Two customer complaint samples were analyzed during this period. One contained no detectable contaminants other than physical damage to the pack. The other was contaminated with compounds found in cherry and strawberry flavor formulations (identified by D. Magin using GC/MS).

A. S. Konstabo

2000829677